

What is claimed is:

1. An optical disk having a central axis and a major face extending in a radial direction from the central axis, the optical disk being rotated around the central axis controllably at an angular velocity or a linear velocity and being formed with a recording layer on the major face, the recording layer being optically recordable with information and being formed with a track area containing tracks which are arranged at a predetermined track pitch in the radial direction and which are accessible by an optical beam to read or write information, wherein the recording layer is preliminarily recorded with control information indicative of the predetermined track pitch, the control information being readily readable from the recording layer to facilitate the accessing of the tracks by the optical beam.

2. The optical disk according to claim 1, wherein the control information further indicates either of a predetermined linear velocity or a predetermined angular velocity, which can be also readily read from the recording layer to facilitate the accessing of the tracks by the optical beam.

3. The optical disk according to claim 1, wherein the control information is recorded in the form of a code corresponding to a discrete numerical value of the

predetermined track pitch.

4. The optical disk according to claim 1, wherein the track area includes a program region for recording contents information, a lead-in region preceding the program region in a progression direction of the accessing by the optical beam and recording the control information, and a lead-out region succeeding the program region in a progression direction of the accessing by the optical beam.

5. The optical disk according to claim 1, wherein the recording layer is divided into the track area and a reflective area free of tracks and arranged radially inward of the track area, and wherein the control information is recorded on the reflective area in the form of a bar code arranged in a circumferential direction of the optical disk.

6. The optical disk according to claim 1, wherein the track area is divided into a program region where contents information can be written for recording, a trial region where trial writing can be performed before writing of the contents information, and a free region provided radially inward of the trial region, and wherein the control information is recorded in the tracks of the free region.

7. The optical disk according to claim 1, being selected from a group consisting of read-only disks of CD

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format including CD-DA and CD-ROM, recordable disks of CD format including CD-R and CD-RW, read-only disks of DVD format including DVD-ROM, DVD-video and DVD-Audio, recordable disks of DVD format including DVD-R, DVD+RW, DVD-RW and DVD-RAM, laser disks, magnet optical disks, and other disk-shaped optical recording media.

8. An optical disk having a central axis and a major face extending in a radial direction from the central axis, the optical disk being rotated around the central axis controllably at an angular velocity or a linear velocity and being formed with a recording layer on the major face, the recording layer being optically recordable with information and being formed with a track area containing tracks which are arranged at a predetermined track pitch in the radial direction and which are accessible by an optical beam to read or write information, wherein the recording layer is preliminarily recorded with control information indicative of a predetermined linear velocity, the control information being readily readable from the recording layer to facilitate the accessing of the tracks by the optical beam.

9. The optical disk according to claim 8, wherein the control information further indicates the predetermined track pitch, which can be also readily read from the recording layer to facilitate the accessing of the tracks by the optical beam.

10. The optical disk according to claim 8, wherein the control information is recorded in the form of a code corresponding to a discrete numerical value of the predetermined linear velocity.

11. The optical disk according to claim 8, wherein the track area includes a program region for recording contents information, a lead-in region preceding the program region in a progression direction of the accessing by the optical beam and recording the control information, and a lead-out region succeeding the program region in a progression direction of the accessing by the optical beam.

12. The optical disk according to claim 8, wherein the recording layer is divided into the track area and a reflective area free of tracks and arranged radially inward of the track area, and wherein the control information is recorded on the reflective area in the form of a bar code arranged in a circumferential direction of the optical disk.

13. The optical disk according to claim 8, wherein the track area is divided into a program region where contents information can be written for recording, a trial region where trial writing can be performed before writing of the contents information, and a free region provided radially inward of the trial region, and wherein the control

information is recorded in the tracks of the free region.

14. The optical disk according to claim 8, being selected from a group consisting of read-only disks of CD format including CD-DA and CD-ROM, recordable disks of CD format including CD-R and CD-RW, read-only disks of DVD format including DVD-ROM, DVD-video and DVD-Audio, recordable disks of DVD format including DVD-R, DVD+RW, DVD-RW and DVD-RAM, laser disks, magnet optical disks, and other disk-shaped optical recording media.

15. An optical disk having a central axis and a major face extending in a radial direction from the central axis, the optical disk being rotated around the central axis controllably at an angular velocity or a linear velocity and being formed with a recording layer on the major face, the recording layer being optically recordable with information and being formed with a track area containing tracks which are arranged at a predetermined track pitch in the radial direction and which are accessible by an optical beam to read or write information, wherein the recording layer is preliminarily recorded with control information indicative of a predetermined angular velocity, the control information being readily readable from the recording layer to facilitate the accessing of the tracks by the optical beam.

16. The optical disk according to claim 15, wherein the

control information further indicates the predetermined track pitch, which can be also readily read from the recording layer to facilitate the accessing of the tracks by the optical beam.

17. The optical disk according to claim 15, wherein the control information is recorded in the form of a code corresponding to a discrete numerical value of the predetermined angular velocity.

18. The optical disk according to claim 15, wherein the track area includes a program region for recording contents information, a lead-in region preceding the program region in a progression direction of the accessing by the optical beam and recording the control information, and a lead-out region succeeding the program region in a progression direction of the accessing by the optical beam.

19. The optical disk according to claim 15, wherein the recording layer is divided into the track area and a reflective area free of tracks and arranged radially inward of the track area, and wherein the control information is recorded on the reflective area in the form of a bar code arranged in a circumferential direction of the optical disk.

20. The optical disk according to claim 15, wherein the track area is divided into a program region where contents

information can be written for recording, a trial region where trial writing can be performed before writing of the contents information, and a free region provided radially inward of the trial region, and wherein the control information is recorded in the tracks of the free region.

21. The optical disk according to claim 15, being selected from a group consisting of read-only disks of CD format including CD-DA and CD-ROM, recordable disks of CD format including CD-R and CD-RW, read-only disks of DVD format including DVD-ROM, DVD-video and DVD-Audio, recordable disks of DVD format including DVD-R, DVD+RW, DVD-RW and DVD-RAM, laser disks, magnet optical disks, and other disk-shaped optical recording media.

22. An optical disk having a central axis and a major face extending in a radial direction from the central axis, the optical disk being rotated around the central axis controllably at an angular velocity or a linear velocity and being formed with a recording layer on the major face, the recording layer being optically recordable with information and being formed with a track area containing tracks which are arranged at a predetermined track pitch in the radial direction and which are accessible by an optical beam to read or write information, further the recording layer being formed with a groove for guiding the optical beam along the tracks, the groove being wobbled such that information can be

preliminarily recorded along the groove in the form of a sequence of BCD codes by FM modulation, wherein the recording layer is preliminarily recorded with control information readily readable to facilitate the accessing of the tracks by the optical beam, the control information indicating the predetermined track pitch and/or either of a predetermined linear velocity of the tracks or a predetermined angular velocity of the tracks, the control information being recorded as a particular set of BCD codes having a specific combination of respective most significant bits such that lesser bits of the respective BCD codes indicate a value of the control information.

23. The optical disk according to claim 22, wherein the BCD codes are each composed of 8 bits and include first BCD codes indicating minute information, the second BCD codes indicating second information and third BCD codes indicating frame information, and wherein the particular set of BCD codes is composed of a particular set of a minute BCD code, a second BCD code and a frame BCD code such that the particular set has the specific combination of the most significant bits of the respective minute BCD code, second BCD code and frame BCD code.

24. The optical disk according to claim 23, wherein the specific combination of the most significant bits of the minute BCD code, second BCD code and frame BCD code is



selected from "0,0,1", "0,1,0" and 0,1,1".

25. The optical disk according to claim 22, being selected from a group consisting of read-only disks of CD format including CD-DA and CD-ROM, recordable disks of CD format including CD-R and CD-RW, read-only disks of DVD format including DVD-ROM, DVD-video and DVD-Audio, recordable disks of DVD format including DVD-R, DVD+RW, DVD-RW and DVD-RAM, laser disks, magnet optical disks, and other disk-shaped optical recording media.

26. An optical disk having a central axis and a major face extending in a radial direction from the central axis, the optical disk being rotated around the central axis controllably an angular velocity or a linear velocity and being formed with a recording layer on the major face, the recording layer being optically recordable with information and being formed with a track area containing tracks which are arranged at a predetermined track pitch in the radial direction and which are accessible by an optical beam to read or write information, the track area being divided into a program region where contents information can be written for recording, a trial region where trial writing can be performed before writing of the contents information, and a free region provided radially inward of the trial region, wherein the recording layer is preliminarily recorded with control information in the tracks of the free region, such

that the control information is readily readable to facilitate the accessing of the tracks by the optical beam.

27. An optical disk having a central axis and a major face extending in a radial direction from the central axis, the optical disk being rotated around the central axis controllably at an angular velocity or a linear velocity and being formed with a recording layer on the major face, the recording layer being optically recordable with information and being formed with a track area containing tracks which are arranged at a predetermined track pitch in the radial direction and which are accessible by an optical beam to read or write information, the track area including a program region for recording contents information, a lead-in region preceding the program region in a progression direction of the accessing by the optical beam, a lead-out region succeeding the program region in a progression direction of the accessing by the optical beam and a PMA region, wherein control information is recorded in the track area at any of the program region, the lead-in region, the lead-out region and the PMA region, such that the control information is readily readable from the track area to facilitate the accessing of the tracks by the optical beam.

28. An apparatus for carrying out either reproducing of information or recording of information on an optical disk, the apparatus comprising:

a drive section that is provided for rotationally driving an optical disk having a central axis and a major face extending in a radial direction from the central axis, the optical disk being formed with a recording layer on the major face, the recording layer being optically recordable with information and being formed with a track area containing tracks which are arranged at a predetermined track pitch in the radial direction, the recording layer being preliminarily recorded with control information indicative of the predetermined track pitch;

an optical pickup that is provided for accessing the recording layer by an optical beam to read information when the optical disk is driven;

an acquisition section that is provided for acquiring the control information indicative of the predetermined track pitch from the information read by the optical pickup; and

a control section that operates based on the acquired control information for controlling the drive section and the optical pickup to perform either the reproducing of information or the recording of information.

29. The apparatus according to claim 28, wherein the control information is recorded in the form of a code corresponding to a discrete numerical value of the predetermined track pitch, and wherein the apparatus further comprises a converter for converting the code into the

discrete numerical value of the predetermined track pitch so as to enable the control section to control the drive section and the optical pickup.

30. An apparatus for carrying out either reproducing of information or recording of information on an optical disk by means of an optical beam, the apparatus comprising:

a drive section that is provided for rotationally driving an optical disk at a predetermined linear velocity relative to the optical beam, the optical disc having a central axis and a major face extending in a radial direction from the central axis and being formed with a recording layer on the major face, the recording layer being optically recordable with information and being preliminarily recorded with control information indicative of the predetermined linear velocity;

an optical pickup that is provided for accessing the recording layer by the optical beam to read information when the optical disk is driven;

an acquisition section that is provided for acquiring the control information indicative of the predetermined linear velocity from the information read by the optical pickup; and

a control section that operates based on the acquired control information for controlling the drive section and the optical pickup to maintain the predetermined linear velocity during either the reproducing of information

or the recording of information.

31. The apparatus according to claim 30, wherein the control information is recorded in the form of a code corresponding to a discrete numerical value of the predetermined linear velocity, and wherein the apparatus further comprises a converter for converting the code into the discrete numerical value of the predetermined linear velocity so as to enable the control section to control the drive section and the optical pickup.

32. An apparatus for carrying out either reproducing of information or recording of information on an optical disk, the apparatus comprising:

a drive section that is provided for rotationally driving an optical disk at a predetermined angular velocity, the optical disc having a central axis and a major face extending in a radial direction from the central axis and being formed with a recording layer on the major face, the recording layer being optically recordable with information and being preliminarily recorded with control information indicative of the predetermined angular velocity;

an optical pickup that is provided for accessing the recording layer by the optical beam to read information when the optical disk is driven;

an acquisition section that is provided for acquiring the control information indicative of the

predetermined angular velocity from the information read by the optical pickup; and

a control section that operates based on the acquired control information for controlling the drive section and the optical pickup to maintain the predetermined angular velocity during either the reproducing of information or the recording of information.

33. The apparatus according to claim 32, wherein the control information is recorded in the form of a code corresponding to a discrete numerical value of the predetermined angular velocity, and wherein the apparatus further comprises a converter for converting the code into the discrete numerical value of the predetermined linear velocity so as to enable the control section to control the drive section and the optical pickup.

34. An apparatus for carrying out either reproducing of information or recording of information on an optical disk by means of an optical beam, the apparatus comprising:

a drive section that is provided for rotationally driving an optical disk controllably at an angular velocity or a linear velocity, the optical disk having a central axis and a major face extending in a radial direction from the central axis and being formed with a recording layer on the major face, the recording layer being optically recordable with information and being formed with a track area

containing tracks which are accessible by the optical beam to read or write information, further the recording layer being formed with a groove for guiding the optical beam along the tracks, the groove being wobbled such that information can be preliminarily recorded along the groove in the form of a sequence of BCD codes by FM modulation, the recording layer being preliminarily recorded with control information as a particular set of BCD codes having a specific combination of respective most significant bits such that lesser bits of the respective BCD codes indicate a discrete numerical value of the control information, the control information indicating the predetermined track pitch and/or either of a predetermined linear velocity of the tracks or a predetermined angular velocity of the tracks;

an optical pickup that is provided for accessing the recording layer by the optical beam to read information when the optical disk is driven;

an acquisition section that is provided for acquiring the control information as the particular set of BCD codes from the information read by the optical pickup; and

a control section that operates based on the acquired control information for controlling the drive section and the optical pickup to perform either the reproducing of information or the recording of information.

35. The apparatus according to claim 35, further

comprising a converter for converting the particular set of BCD codes into the discrete numerical value of the control information so as to enable the control section to control the drive section and the optical pickup.

36. An apparatus for carrying out either reproducing of information or recording of information on an optical disk, the apparatus comprising:

a drive section that is provided for rotationally driving an optical disk having a central axis and a major face extending in a radial direction from the central axis, the optical disk being formed with a recording layer on the major face, the recording layer being optically recordable with information and being formed with a track area containing tracks which are arranged at a predetermined track pitch in the radial direction, the track area being divided into a program region where contents information can be written for recording, a trial region where trial writing can be performed before writing of the contents information, and a free region provided radially inward of the trial region such that control information is preliminarily recorded in the tracks of the free region;

an optical pickup that is provided for accessing the tracks by an optical beam to read information when the optical disk is driven;

an acquisition section that is provided for acquiring the control information from the information read

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by the optical pickup; and

a control section that operates based on the acquired control information for controlling the drive section and the optical pickup to perform either the reproducing of information or the recording of information.

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